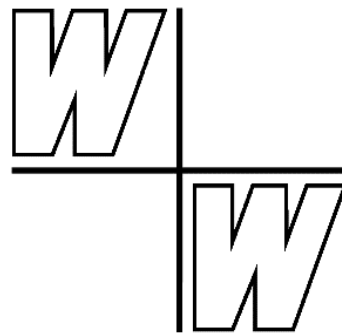


Data Collection on Intergeneric Hybrids and Basic Types:

ANGIOSPERMAE **families D–I**

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with the assistance of Benjamin Scholl
version 2 01.10.2026



Angiospermae D–I

Summary:

55 intergeneric hybrids IG (incl. IST + IT + ISF), in 8 families.

8 preliminary basic types (3 tribes, 5 families)

Average species number per basic type $7507 / 8 = 938$ species.

Droseraceae 3: 180. 0 IG

Elaeagnaceae 3: 102. 0 IG

Ericaceae Ericoideae tribe Rhodoreae (*Rhododendron*) 1: 1025. – (>1000 IS)

Euphorbiaceae Euphorbioideae tribe Euphorbieae (*Euphorbia*) 1: 2150. – (>100 IS)

Fagaceae 12: 1000. 1 IG

Gesneriaceae (provisional) 160: 2400. 40 IG

Grossulariaceae (*Ribes*) 1: 150. – (ca. 80 IS)

Hypericaceae tribe Hypericeae (*Hypericum*) 1: 500. – (>15 IS)

Didiereaceae (Caryophyllales) 6: 11

didierea family = Didiereagewächse

3 subfamilies.

Succulent plants of Africa.

IS: POWO (2026): 0 IS.

en.wikipedia 2024: „monophyletic. The family is closely related to the New World family Cactaceae (cacti), sufficiently closely so that species of Didiereaceae can be grafted successfully on some cacti”.

Dipterocarpaceae (Malvales) 16: 700

dipterocarp family = Flügelfruchtgewächse

2 subfamilies.

IS: POWO (2026): 0 IS.

Hopea × *Shorea* HY Dipterocarpoideae Shoreae (→ *Neobalanocarpus heimii*) Kamiya et al. 2005 (putative hybridogenous origin)

References:

Kamiya K et al. (2005) Phylogeny of PgiC gene in *Shorea* and its closely related genera (Dipterocarpaceae), the dominant trees in Southeast Asian rain forests. American J. Bot. 92, 775–788. <http://www.ncbi.nlm.nih.gov/pubmed/21652457>

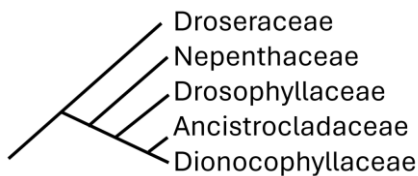
Droseraceae (Caryophyllales) 3: 202

sundew family = **Sonnentaugewächse**

Aldrovanda 1 *vesiculosa*, *Dionaea* 1 *muscipula*, *Drosera* 200 (11 subgenera).

Droseraceae is part of the 5 basal families of the order Caryophyllales, see the figure below. All these families are carnivorous or mainly carnivorous, but with different methods of trapping.

The monotypic family Drosophyllaceae (*Drosophyllum lusitanicum*) has much in common with Droseraceae, but is distinct by molecular data, different trapping mechanisms and chromosomal structure.



Order Caryophyllales: phylogeny of the 5 basal carnivorous families, after AP website 2026.

Probably **basic type family Droseraceae** (3: 180) as well-defined, very specialized carnivorous plants. Intergeneric hybrids are unknown, but the genera are closely related. – One might think that the related family Drosophyllaceae belongs to the same basic type, but from a molecular as well as morphological view the two families are separated with family Nepenthaceae in between.

IS: POWO (2026): *Drosera* 15 IS.

References:

International Carnivorous Plant Society (2026) *Drosera* phylogeny.

<https://www.carnivorousplants.org/cp/evolution/DroseraPhylogeny> „The evolution of *Drosera* and the other genera in the Droseraceae provides as many twists and turns in the story as any Gothic novel.”

Drosophyllaceae (Caryophyllales) 1: 1

Portuguese sundew or dewy pine = **Taubblattgewächse**

Drosophyllum lusitanicum.

see Droseraceae.

Elaeagnaceae (Rosales) 3: 102

oleaster family = **Ölweidengewächse**

Formerly placed in various other orders.

Elaeagnus 92, *Hippophae* 7, *Shepherdia* 3.

Probably **basic type family Elaeagnaceae** (3: 102) as a well-defined family with a unique set of characteristics, e.g. symbiosis of the roots with nitrogen fixing actinomycetes of the genus *Frankia* and stems and leaves covered with silvery peltate or scaly hairs.

IS: POWO (2026): *Elaeagnus* 3 IS, *Hippophae* 1 IS.

Ericaceae (incl. Pyrolaceae, Monotropaceae) (Ericales) 126: 4360

heath family or heather family = Heidekrautgewächse

9 subfamilies:

Arbutoideae 6: 90.

Cassiopoideae 1: 12.

Enkianthoideae 1:16.

Epacridoideae (= Stypheloideae) 35: 545.

Ericoideae 19: 2096.

Harrimanelloideae 1: 2.

Monotropoideae 11: 13.

Pyroloideae 4: 40.

Vaccinioideae 50: 1615.

Arbutoideae 6: 90

IS: POWO (2026): *Arbutus* 2 IS, *Arctostaphylos* 8 IS.

Cassiopoideae 1: 12

Cassiope 12.

IS: POWO (2026): *Cassiope* 1 IS.

Epacridoideae (= Stypheloideae) 35: 545

7 tribes.

IS: POWO (2026): *Dracophyllum* 7 IS.

Ericoideae 19: 2096

5 tribes.

Ericaceae 3: 856

Calluna 1 *vulgaris*, *Daboecia* 2, *Elliottia*, *Erica* 853 (incl. *Bruckenthalia*^o).

Possibly **basic type Ericaceae Ericoideae tribe Ericaceae** (3: 856). The 3 genera are closely related.

IS: POWO (2026): *Daboecia* 1 IS (*azorica* × *cantabrica*, many cultivars), *Erica* 8 IS.

Bruckenthalia^o (= *Erica*) *spiculifolia* × *Erica* *div. spec.* IS Grant et al. 2004.

~~*Calluna vulgaris* × *Erica cinerea*~~ **erroneous** (→ × *Ericalluna* G. Krüssmann 1960 in Deutsche Baumschule 12, 154) IK 1987, Grant et al. 2004 (abnormal *Erica*, not a hybrid), POWO 2025

(unplaced)

Phyllodoceae 7: 43. 4 IG

Monophyletic.

Bejaria 15, *Elliottia* 5, *Epigaea* 3, *Kalmia* 10 (incl. *Loiseleurisa*°), *Kalmiopsis* 2, *Phyllodoce* 3, *Rhodothamnus* 2.

Possibly **basic type Ericaceae Ericoideae tribe Phyllodoceae** (7: 43) as a monophyletic tribe and sister clade to all other tribes of subfamily Ericoideae (cf. Gillespie EL & Kron KA (2013). <https://doi.org/10.1600/036364413X670250>). 4 of the 7 genera are connected directly by intergeneric hybrids indirectly including *Epigaea* but not *Bejaria*.

IS: POWO (2026): *Phyllodoce* 2 IS.

Kalmia procumbens (= *Loiseleuria*°) × *Phyllodoce caerulea* **Phyllodoceae** (→ × *Phyllodoleuria*° Halda 2002 Acta Mus. Richnov., Sect. Nat. 9 (1), 70) IPNI 2008, Feng et al. 2024 (→ × *Phyllokalmia*), AP website 2025, POWO 2026

~~*Kalmia* × *Rhododendron* IT **Phyllodoceae** × **Rhodoreae**~~ Pierce 1974. Grant et al. 2004 (erroneous, and rather a cultivar of *Rhododendron*, see also <https://www.rhs.org.uk/science/conservation-biodiversity/conservation-projects/hybrids-between-kalmia-and-rhododendrons>)

Kalmiopsis leachiana × *Phyllodoce breweriana* **Phyllodoceae** (→ × *Phylliopsis* J. Cullen & R. Lancaster 1977 in Garden (London) 102 (9), 380) IK 1987. POWO 2025. The spontaneous hybrid was found in 1960 in the nursery Hillier in England, see www.atlanticrhodo.org

Kalmiopsis × *Rhodothamnus* **Phyllodoceae** (→ × *Kalmiothamnus* B. N. Starling 1985 in Plantsman 6, 225) IK 1987, AP website 2025

~~*Phyllodoce* × *Rhododendron* IT **Phyllodoceae** × **Rhodoreae**~~ Willis 1985. Has never been confirmed

Phyllodoce × *Rhodothamnus* **Phyllodoceae** (→ × *Phyllothamnus* (Lindley) C. K. Schneider) (*P. empetrifomis* × *R. chamaecistus* → × *P. erectus*), Knobloch 1972, Zander 2008, AP website 2025, POWO 2025

Rhodoreae 1: 1025

Rhododendron (incl. *Azalea*°, *Ledum*°, *Menziesia*°, *Therorodion*°) 1025.

Probably **basic type Ericaceae Ericoideae tribe Rhodoreae** (*Rhododendron*) (1: 1025) as a well-defined tribe with only one genus *Rhododendron* and many interspecific hybrids; POWO (2026) lists 84 IS, but *Rhododendron* species cross readily and much more ore than 10000 cultivars have been described, a great part of them hybrids.

IS: POWO (2026): *Rhododendron* 84 IS. Many details in Leslie et al. 2004.

In horticulture more than 10000 cultivars are known, most of them interspecific.

Azalea° (= *Rhododendron* p.p.) × *Rhododendron* IS **Rhodoreae** (→ × *Rhodazalea* hort. 1908 ex Journ. Soc. Nat. Hort. France, Ser. IV, 9, 328; = × *Azaleodendron* Rodigas 1893 ex Gard. Chron. 1: 665) IK 1929, Knobloch 1972, Willis 1985, POWO 2025 (*Rhododendron* IS)

Ledum[°] (= *Rhododendron*) *glandulosum*, *palustre* × *Rhododendron* *div. spec.* IS *Rhodoreae* (→ × *Ledodendron* F. de Vos 1962 in Quart. Bull. Amer. Rhododendron Soc. 16, 272) IK 1996, Paden 1974, Blake 1990, POWO 2025 (*Rhododendron* IS)

Menziesia[°] (= *Rhododendron* *p.p.*) × *Rhododendron* IS *Rhodoreae* Kita et al. 2005a, 2005b

~~*Rhododendron* × *Vaccinium* IS~~ *Ericoideae* *Rhodoreae* × *Vaccinioideae* Willis 1985.
unconfirmed

Monotropoideae 11: 13

2 tribes.

Monotropa 4, ...

Pyroloideae 4: 40

Chimaphila, *Pyrola* 35, ...

IS: POWO (2026): *Pyrola* 1 IS.

Vaccinioideae 50: 1615

5 tribes.

Gaultherieae 1: 292

Gaultheria 292.

IS: POWO (2026): *Gaultheria* 5 IS.

Gaultheria antipoda, *collinsoi*, *shallon* × *Pernettya*[°] *mucronata*, *macrostigma* (= *Gaultheria* *p.p.*) IS *Gaultherieae* (→ × *Gaulnettya* 1937 Marchant, Cat. Choice Trees, etc. 83; cf. Mulligan 1939 in Journ. Roy. Hort. Soc. 94, 127; = × *Gaulthettya* Camp 1939 in Bull. Torr. Bot. Club 66, 26) Burt & Hill 1935 (≥7 nat. hyb. in New Zealand), IK 1947, Knobloch 1972, Willis 1985, BR 1992, Zander 2008, AP website 2025 (*Gaultheria* IS), POWO 2025 (*Gaultheria* IS)

Vaccinieae 32: 1500

Agapetes 13, *Vaccinium* 800 (polyphyletic), ...

IS: POWO (2026): *Vaccinium* 6 IS. See also Blake 1990.

Khalid AM (2025) report many new IS in *Vaccinium*, incl. intersectional wide hybrids

<https://academic.oup.com/hr/article/12/12/uhaf246/8256409>

Polycodium[°] (*Vaccinium*) *stamineum*) × *Vaccinium myrtilloides* IS Knobloch 1972

Rhodococcum[°] (*Vaccinium*) *vitis-idaea* × *Vaccinium myrtillus* IS (→ × *Rhodocinium* Avrorin 1958 in Bot. Journ. URSS 43, 1723, nom. inval.) (nat. hyb. Europe) (= *V. × intermedium* Ruthe) IK 1966, Knobloch 1972, Czerepanov 1995, POWO 2025 (*Vaccinium* IS)

References:

- Blake F (1990) Fascinating bigenerics. J. Amer. Rhododendron Soc. 44 (2).
<http://scholar.lib.vt.edu/ejournals/JARS/v44n2/v44n2-blake.htm> discusses all bigeneric intergeneric within Ericaceae, but see Grant et al. (2004)
- Burt & Hill (1935) The genera *Gaultheria* and *Pernettya* in New Zealand, Tasmania, and Australia. J. Linn. Soc. Bot. 49, 611–644.
- Grant ML et al. (2004) Is there such a thing as *Kalmia* × *Rhododendron*? J. Amer. Soc. Hortic. Science 129 (4), 517–522. <http://www.rhs.org.uk/RHSWebsite/files/87/87d40960-00c5-4ccb-b018-a32e9e83473b.pdf>
- Czerepanov SK (1995) Vascular plants of Russia and adjacent states (the former USSR). Cambridge: Cambridge University Press.
- Gillespie EL & Kron KA (2013) Molecular phylogenetic relationships and morphological evolution within the tribe Phyllodoceae (Ericoideae, Ericaceae). Syst. Bot. 38, 752–763 (12). <https://doi.org/10.1600/036364413X670250>
- Kita K et al. (2005a) Intergeneric hybridization between *Menziesia* and *Rhododendron* based on molecular phylogenetic data. J. Japanese Soc. Hortic. Science 74 (1), 51–56.
- Kita K et al. (2005b) Plastid inheritance and plastome-genome incompatibility of intergeneric hybrids between *Menziesia* and *Rhododendron*. J. Japanese Soc. Hortic. Science 74 (4), 318–323.
- Leslie AC (2004) International *Rhododendron* Register and Checklist. Second ed. Royal Horticultural Society. <https://www.rhodogroup-rhs.org/media/docs/publications/rhodoregister/International%20Rhododendron%20Register%20Second%20Edition%20Volume%201%20A-Lel%20FOR%20WEBSITE.pdf>
- Paden DW (1974) A promising innovation. Quart. Bull. Amer. Rhododendron Soc. 28, 222.
- Pierce LJ (1974) An unusual intergeneric cross. Quart. Bull. Amer. Rhododendron Soc. 28, 45.

Euphorbiaceae (Malpighiales) 220: 6900

spurge family = Wolfsmilchgewächse

5 subfamilies:

Acalyphoideae (20 tribes) 99: 1865.

Cheilosoideae 2: 7.

Crotonoideae (12 tribes) 68: 2000.

Euphorbioideae (5 tribes) 25: 2800.

Peroideae 5: 135.

Crotonoideae 68: 2000. 1 ISF

12 tribes.

Croton 180,

IS: POWO (2026): *Croton* 0 IS.

Nassar & Silva (1986): *Manihot* div. IS (*esculenta* × div. spec.).

Jatropha curcas × *Ricinus communis* **ISF** Crotonoideae Jatrophaeae × Acalyphoideae Acalypheae
 Laosatit et al. 2014, 2017, Premjet et al. 2019 (hand crossed, intermediate)

Manihot esculenta × *Ricinus communis* ISF Crotonoideae Manihoteae × Acalyphoideae
Acalypheae Gedil et al. 2009 (asymmetric)

Euphorbioideae 25: 2800

5 tribes.

Euphorbieae 1: 2150

Euphorbia 2150 (4 subgenera, incl. some 80 synonyms, e.g. *Chamaesyce*°).

Probably **basic type Euphorbiaceae Euphorbioideae tribe Euphorbieae** (*Euphorbia*) (1: 2150). The very large genus *Euphorbia* exhibits a broad range of life forms, but all species share unique floral structures (Cyathium) and poisonous latex-like sap. Many interspecific hybrids are known. Former satellite genera like *Chamaesyce* proved to nest within *Euphorbia*.

IS: POWO (2025): *Euphorbia* 41 IS. But in horticulture more hybrids are known.

References:

- Gedil M et al. (2009) Development of molecular genomic tools for verification of intergeneric hybrids between castor bean (*Ricinus communis* L.) and cassava (*Manihot esculenta* Crantz). J. Food Agriculture & Environment 7 (2), 534–539.
- Laosatit K et al. (2014) Development of interspecific and intergeneric hybrids among jatropha-related species and verification of the hybrids using EST-SSR markers. Plant Genetic Resources – Characterization and Utilization 12 SI, S 58–S 61.
- Laosatit K et al. (2017) Overcoming crossing barriers between jatropha (*Jatropha curcas* L.) and castor bean (*Ricinus communis* L.), Crop Breeding Appl. Biotechnol. 17, 164–167.
- Nassar NM & Silva (1986) Interspecific hybridization between cassava and wild *Manihot* species. Cien. Cult. 38, 1050–1055.
- Premjet D et al. (2019) Intergeneric hybrid from *Jatropha curcas* L. and *Ricinus communis* L.: Characterization and polyploid induction. Biology Basel 8 (2).
<https://doi.org/10.3390/biology8020050>

Fabaceae (Fabales) 765: 20000

legume family = Hülsenfrüchtler, Leguminosen

6 subfamilies (AP website 2026), e.g.:

Caesalpinioideae (11 tribes) 163: 4700, Cercidioideae 14: 335, Faboideae 500: 14000.

Family **Fabaceae** is one of the largest families at all. In contrast to the two other large plant families Asteraceae and Orchidaceae the number of known intergeneric hybrids is extremely low (**Fabaceae** 765: 20000, **7 IG.** **Asteraceae**: 1620: 25000, **120 IG.** **Orchidaceae** 880: 26000, **500 IG.**) Therefore, it is difficult to look for basic types in Fabaceae which are mainly based on hybridization.

IS: According to the data given by POWO (2026) the number of interspecific hybrids is likewise very low and reported for only some 30 of 765 genera. Interestingly, in *Astragalus* (Faboideae Astragaleae) as the largest genus worldwide (3000 species) no interspecific hybrid

is known.

IS in the whole family: *Acacia* 6 IS, *Adenocarpus* 1 IS, *Anthyllis* 3 IS, *Astragalus* 0 IS, *Baptisia* 7 IS, *Brachystegia* 1 IS, *Calliandra* 1 IS, *Chamaecrista* 2 IS, *Chamaecytisus* 1 IS, *Colutea* 1 IS, *Cytisus* 3 IS, *Eriosema* 3 IS, *Erythrina* 5 IS, *Genista* 12 IS, *Gleditsia* 1 IS, *Hedysarum* 3 IS, *Lathyrus* 1 IS, *Lespedeza* 17 IS, ...

Caesalpinioideae 163: 4700

11 tribes.

Acacia 1000, *Chamaecrista* 370, *Mimosa* 600, *Parkinsonia* 12, *Senna* 290, ...

Cercidium^o *praecox* (= *Parkinsonia* p.p.) × *Parkinsonia aculeata* IS (→ *P. × carterae*) (nat. hyb.)
Hawkins et al. 1999

Faboideae 500: 14000. 7 IG

pea and bean allies = Schmetterlingsblütler

30 tribes:

Astragaleae 22, Fabeae, Phaseoleae 90, Sophoreae 16, Trifolieae 6, ...

Atylosia^o (*Cajanus*) div. spec. × *Cajanus cajan* IS Phaseoleae Knobloch 1972, Kumar et al. 1985, Rangasamy et al. 1991, Srivastava & Tripathi 2001

Baptisia × *Thermopsis* Sophoreae (art. hyb.) Hawkins et al. 2013, 2017

Cajanus × *Dolichos* Phaseoleae Datta & Saha 1972

Cajanus cajan × *Vigna mungo* (= *Phaseolus* p.p.) Phaseoleae Patel et al. 1998, Patel & Verma 1998

~~*Caragana* × *Pisum* IT~~ Hedysareae × Fabeae Knobloch 1972 (*Caragana arborescens* is a shrub, *Pisum sativum* is an herb) → erroneous according to McComb 1975

Carmichaelia astonii × *Notospartium*^o (*Carmichaelia*) *glabrescens* IS Coluteae (→ × *Carmispartium* G. Hutchins ex M. D. Griffiths 1992 in *Plantsman* 13 (4): 244) IK 1997

Glycine max × *Vicia hajastana* (= *anatolica*) IT Phaeoleae × Fabeae SO Constabel et al. 1977

Lablab (= *Dolichos*) *purpureus* × *Vigna unguiculata* Phaseoleae Patel et al. 1998

Lens × *Vicia* Fabeae Knobloch 1972. unconfirmed, possibly only graft hybrid

Lotus × *Medicago* IT Loteae × Trifolieae SO AS Grant 1995 (asymmetric), Kaimori et al. 1998

Lupinus polyphyllus × *Pisum arvense, sativum* IT Genisteae × Fabeae Brezhnev 1962.
confirmation is needed

Medicago div. spec. × *Melilotus* div. spec. Trifolieae Ullmann 1938, Oehler 1956, Belea 1992

Medicago media × *Trigonella caerulea* Trifolieae Ullmann 1938

Medicago sativa × *Onobrychis viciaefolia* IT Trifolieae × Hedysareae SO AS Li et al. 1993 (asymmetric), Xu & Jia 1997 (asymmetric)

Melilotus × *Trigonella* Trifolieae Ullmann 1938, Oehler 1956, Belea 1992

Phaseolus mungo × *Vigna calcaratus* Phaseoleae Ballon-York 1959 (the authors report the failure of crossing), Knobloch 1972, Chowdhury & Chowdhury 1977, Belea 1992

Pisum sativum × *Lathyrus sativus* Fabeae SO Durieu & Ochatt 2000

Pisum × *Vicia faba* Fabeae Oehler 1956, Belea 1992, McComb 1975

Thermopsis turcica × *Vicia faba* IT Sophoreae × Fabeae Tekdal & Cetiner 2017 (only up to the globular stage of embryo formation and only in one direction)

References:

- Arcioni S et al. (1996) Somatic hybridisation and embryo rescue for the induction of wild germplasm. In: McKersie BD (ed.) Biotechnology and the improvement of forage legumes. CAB I Oxon, UK.
- Brezhnev DD (1960; English transl. 1962) wide hybridization in vegetable breeding. p. 39–47 in: Tsitsiv (ed.) Wide hybridization in plants. Jerusalem.
<http://www.bulbnrose.org/Heredity/BrezhnevHybrids1960.html>
- Chowdhury RK & Chowdhury JB (1977) Intergeneric hybridization between *Vigna mungo* and *Phaseolus calcaratus*. Indian J. Agricultural Sciences 47, 117–121.
- Constabel F et al. (1977) Chromosome compatibility in intergeneric cell hybrids, *Glycine max* × *Vicia hajastana*. Comptes Rendus Hebd. Acad. Sci. Ser. D 285 (4), 319–322.
- Datta PC & Saha N (1972) A few trials of hybridization in Euphaseoleae and Cajaneae. Castanea 37, 294–297.
- Durieu P & Ochatt SJ (2000) Cell and molecular biology, biochemistry and molecular physiology. Efficient intergeneric fusion of pea (*Pisum sativum* L.) and grass pea (*Lathyrus sativus* L.) protoplasts. J. Exp. Botany 51, 1237–1242.
- Grant WF (1995) A chromosome atlas and interspecific–intergenic index for Lotus and *Tetragonolobus* (Fabaceae). Canad. J. Bot. 73 (11), 1787–1809. **AS, SO**
- Hawkins JA et al. (1999) Investigation and documentation of hybridization between *Parkinsonia aculeata* and *Cercidium praecox* (Leguminosae: Caesalpinioideae). Plant Syst. Evol. 216, 1–2.
- Hawkins SM et al. (2013) Seed set and germination for interspecific and intergeneric hybrids in two genera of Fabaceae. ISHS Acta Horticulturae 1055: Proc. Int. Plant Propagator's Society – 2013. http://www.actahort.org/books/1055/1055_103.htm
- Hawkins S et al. (2017) Interspecific and intergeneric hybridization in *Baptisia* and *Thermopsis*. HortScience 52, 1177–1181.
- Kaimori N et al. (1998) Asymmetric somatic cell hybrids between alfalfa and birdsfoot trefoil. Breeding Science 48, 29–34. *Lotus* × *Medicago*
- Kazimierski T & Kazimierska EM (1985) An attempt to cross *Trifolium repens* with *Medicago media*. Genetica Polonica 26, 341–350. **no success**
- Kumar PS et al. (1985) Intergeneric hybridization in pigeonpea. I. Effect of hormone treatment. Field Crops Research 10 (4), 315–322. <http://oro.open.ac.uk/29405/> *Atylosia*^o × *Cajanus*, for details see also the thesis of PS Kumar (1985)
- Li YG et al. (1993) Asymmetric somatic hybrid plants between *Medicago sativa* L. (Alfalfa, Lucerne) and *Onobrychis viciifolia* Scop. (Sainfoin). Theoretical & Applied Genetics 87 (4), 455–463.
- Mccomb JA (1975) Is intergeneric hybridization in the Leguminosae possible? Euphytica 24 (2), 497–502. **all intergeneric Leguminosae hybrids listed by Knobloch (1962) are unconfirmed**
- Patel OP & Verma RC (1998) Meiotic behaviour of *Cajanus cajan* × *Vigna mungo* hybrid. Cytologia (Tokyo) 63, 279–282. **asymmetric?**
- Patel OP et al. (1998) Morphological studies on intergeneric and interspecific hybrids of some

grain legumes. Indian J. Genetics & Plant Breeding 58, 327–336. *Cajanus* × *Vigna*, *Lablab* × *Vigna*.

Rangasamy P et al. (1991) Heterotic vigour in intergeneric hybrids of pigeonpea for protein and methionine content. Crop Improv. 18, 152–153.

Schley RJ et al. (2020) Introgression across evolutionary scales suggests reticulation contributes to Amazonian tree diversity. Molecular Ecology 29 (21), 4170–4185.

<https://onlinelibrary.wiley.com/doi/full/10.1111/mec.15616>

Srivastava K & Tripathi SN (2001) Intergeneric hybridization between *Atylosia* and *Cajanus*. Proc. Natl. Acad. Sciences India, Section B, 71, 269–274.

Tekdal D & Cetiner S (2017) Investigation of intergeneric crossability of *Vicia faba* L. and *Thermopsis turcica* Kit Tan, Vural et Ku double dagger ukoduk. Genetic resources and crop evolution 64 (7), 1605–1611.

Ullmann W (1938) Natürliche und künstliche Bastardierung zwischen Arten und Gattungen der kleeartigen Leguminosen. Forschungsdienst 5, 387–426.

Xu Z & Jia J (1997) Regeneration of intergeneric somatic hybrids by protoplast fusion between *Onobrychis viciaefolia* and *Medicago sativa*. Science in China. Series C, Life Sciences (English Edition) 40 (4), 363–370. *somatic, asymmetric*

Fagaceae (Fagales) 12: 1000 (excl. *Nothofagus*). 1 IG

beech family = Buchengewächse

2 subfamilies:

Fagoideae 1: 10 *Fagus* 10, (*Nothofagus* 40 is now separated as a family of its own).

Quercoideae (incl. *Castaneoideae*) 11: 990 *Castanea* 12, *Castanopsis* 102, *Chrysolepis* 2, *Lithocarpus* 120–300, *Notholithocarpus* 1, *Quercus* 600, *Trigonobalanus* 3 (sometimes split into 3 separate genera).

Possibly **basic type family Fagaceae** (12: 1000). Monophyly of the family is strongly supported by both morphological (especially fruit morphology) and molecular data (Judd et al. 2008, cited after en.wikipedia 2025, see also Liu et al. 2024). – At least all members of the large **genus Quercus** (800) belong to the same basic type due to nearly 200 interspecific hybrids.

– Preliminary basic type studies have been undertaken by Fey in 1984, subsequent to his Ph.D. thesis. These studies are interesting, but differ from what we today think about the basic type definition.

IS: POWO (2026): *Castanea* 1 IS, *Fagus* 2 IS, *Quercus* 193 IS!

Castanea × *Castanopsis* Quercoideae (→ × *Castanocastanea*° P. V. Heath 1992 in Calyx 1, 196 = „× *Castanocasta*“ Ciferri & Giacom. 1954 Nomencl. Fl. Ital. Pt. 2, 219; incorrect name) IK 1974, IK 1996, POWO 2025. – closely related sister taxa (cf. Liu SY et al. 2024, Fig. 1. <https://doi.org/10.1111/jipb.13773>)

References:

Fey BS & Endress PK (1983) Developmental and morphological interpretation of the cupule

in Fagaceae. Flora 173, 451–468. <http://beat-samuel-fey.ch/wb/media/Development%20and%20Morphological%20Interpretation%20of%20the%20Cupule%20in%20Fagaceae.pdf>

Fey BS (1981) Untersuchungen über Bau und Ontogenese der Cupula, Infloreszenzen und Blüten sowie zur Embryologie bei Vertretern der Fagaceae und ihre Bedeutung für die Systematik. Dissertation Universität Zürich. http://beat-samuel-fey.ch/wb/media/Dissertation_Beat_Samuel_Fey.pdf

Fey BS (1984) Untersuchungsergebnisse aus dem Infloreszenzbereich der Fagaceae (Buchengewächse), Problematik der Stammbaumrekonstruktionen und Einführung in eine kreationistisch-wissenschaftliche Arbeitsweise. Factum Juli/August, 12–27. http://beat-samuel-fey.ch/wb/media/Problematik_von_Stammbaumrekonstruktionen_bei_Fagaceen.pdf

Judd WS (2008) Plant systematics: A phylogenetic approach (3rd ed.). Sinauer. ISBN 978-0-87893-407-2.

Liu SY et al. (2024) An integrative framework reveals widespread gene flow during the early radiation of oaks and relatives in Quercoideae (Fagaceae). <https://doi.org/10.1111/jipb.13773>

Flacourtiaceae → Salicaceae

Gentianaceae (Gentianales) 103: 1600. 1 IG

gentian family = Enziangewächse

7 tribes.

Exaculum × *Schenkia* **HY** *Chironieae* (→ *Valdesiana*) Díaz Lifante et al. 2023 (supposed hybridogeneous origin of *Schenkia elegans* from the cross *Exaculum pusillum* × *Schenkia spicata*)

References:

Díaz Lifante Z et al. (2023) Phylogenetic, cytogenetic and morphological evidences are critical for recognizing a new genus: *Valdesiana*, an Iberian intergeneric allopolyploid between *Schenkia* and *Exaculum*. Plant Syst Evol 309, 30. <https://doi.org/10.1007/s00606-023-01864-0>

Geraniaceae (Geraniales) 6: 830

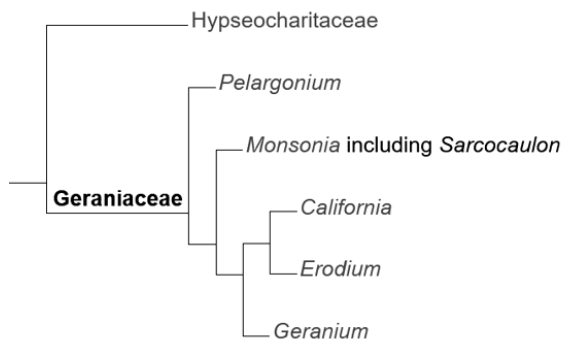
geranium or cranesbill family = Storcheschnabelgewächse

2 clades: *Hypseocharis* 1: 1–3 (or separate family); Geranieae 5: 830.

California, *Erodium* 80, *Geranium* 430, *Monsonia*, *Pelargonium* 280.

Possibly **basic type Geraniaceae** (6: 830) as a well-defined family with a number of genetic features unique amongst angiosperms, though no intergeneric hybrids have been currently described. But confirmation is needed.

IS: POWO (2026): *Erodium* 7 IS, *Geranium* 0 IS (but some are known in horticulture), *Pelargonium* 1 IS (but many are known in horticulture).



Geraniaceae: phylogeny of Jeiter et al. (2017) Geraniales Phylogeny Poster. Research Gate, after en.wikipedia (2026, CC BY SA 4.0).

Gesneriaceae (Lamiales) 160: 4100. 40 IG (incl. 2 IST

gesneriads = Gesneriengewächse, Usambaraveilchen-Verwandte

Monotypic family.

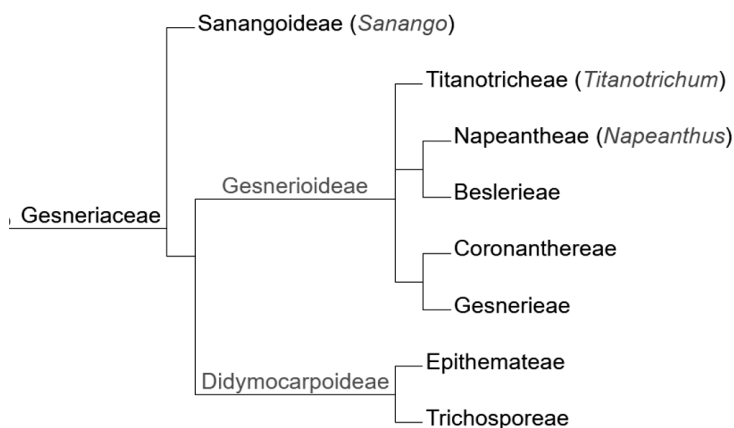
3 subfamilies (Note: in the useful file

<https://de.wikipedia.org/wiki/Gesneriengew%C3%A4chse> 2024, subfamilies and tribes are the same but with assignment of subtribes.)

Didymocarpoideae (the former Cyrtandroideae) 71: 2315.

Gesnerioideae 5 tribes 75: 1830.

Sanangoideae 1: 1 *Sanango racemosum*.



Gesneriaceae: phylogeny of Weber A et al. (2013, 2020), after en.wikipedia (2026, CC BY SA 4.0). – See also the separate figures to tribes Trichosporeae and Gesnerieae.

Possibly basic type **Gesneriaceae** (160: 4100) as a well-defined taxon with typical characteristics. For an actual subdivision, see the figure above. The basal subfamily Sanangoideae is monotypic. In subfamily Didymocarpoideae all genera of the large tribe Trichosporeae (71: 2400) are connected by hybridization. No hybrids are known in or with the small tribe Epithemateae (6: 80). In subfamily Gesnerioideae (75: 1830) 37 intergeneric

hybrids are known, but none of them connect the (closely related) tribes. Further investigations are needed to confirm this provisional basic type.

For compilations and information on hybrids etc., see e.g. the Gesneriad Society

<http://www.gesneriadsociety.org/>, [gesneriadsociety.org/ir_ges/index.htm](http://www.gesneriadsociety.org/ir_ges/index.htm)

See also the World Checklist of Gesneriaceae (Skog & Boggan 2005)

<http://persoon.si.edu/gesneriaceae/checklist> (many synonyms, no tribes).

Didymocarpoideae (= Cyrtandroideae) 88: 2360

3 tribes:

Epithemateae 6: 80.

Titanotricheae 1: 1 (or part of Gesnerioideae?)

Trichosporeae 71: 2400.

Trichosporeae 71: 2400. (1 IG + 2 IST)

subtribes according to de.wikipedia 2025:

Corallodiscinae 1 *Corallodiscus* 4.

Didissandrinae 2 *Didissandra* 8, *Tribounia* 2.

Didymocarpinae 35: 1900 *Aeschynanthus* 140, *Conandron* 1, *Cyrtandra* 600, *Didymocarpus* 70, *Henckelia* 73, *Microchirita* 39, *Oreocharis* 25 (incl. *Briggsia*° and *Opithandra*°)

Ierdoniinae 1.

Leptoboehniae 7.

Litostigminae 1.

Loxocarpinae 14.

Ramondinae 2: 6 *Haberlea* 1, *Ramonda* 4 (incl. *Jancaea* 1).

Streptocarpinae 1 *Streptocarpus* 175 (incl. *Saintpaulia*°).

Tetraphyllinae 1.

For general considerations to the basic type situation, see above. Main genera of tribe **Trichosporeae** (71: 2400) are directly or indirectly connected by hybridization. No hybrids are known connecting tribe Epithemateae.

Briggsia° (= *Oreocharis* p.p.) × *Opithandra*° (= *Oreocharis* p.p.) **IS** *Didymocarpinae* (→ × *Brigandra* O. Schwarz ex F. Jungnickel 1984 in Arch. Züchtungsforsch. 44, 194; = „× *Briggopithandra*“ = „× *Briggsandra*“) IK 1996, photo:

http://www.nargs.org/nargswiki/tiki-browse_gallery.php?galleryId=102

Conandron ramondii × *Ramonda* (= *Jancaea*°) *heldreichii* **IST** *Didymocarpinae* × *Ramondinae* (→ × *Jancaendron* J. Halda 1989 in Preslia 61, 125) Halda 1989, IK 1996, Feng et al. 2024 (→ × *Ramondron* Z. H. Huang & Z. H. Feng nothogen. nov.)

Corallodiscus („*Didissandra*“) *lanuginosus/a* × *Ramonda* (= *Jancaea*°) *heldreichii* **IST**

Corallodiscinae × *Ramondinae* (→ × *Coracaea* C. Feuillet 1993 in Taxon 42, 106; originally published as „× *Jankaessandra*“ J. Halda 1989 in Preslia 61, 127, but *Didissandra lanuginosa* has been transferred in 1947 by Burt to the genus *Corallodiscus*) Halda 1989, IK 1996, Feng et al. 2024 (→ × *Coranda* Z. H. Huang & Z. H. Feng nothogen. nov.)

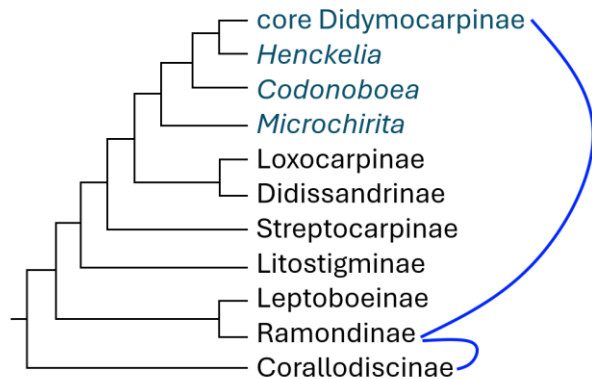
Haberlea rhodopensis × *Ramonda* (*Jancaea*°) *heldreichii* *Ramondinae* (→ × *Jancaeberlea* J. Halda

1989 in Preslia 61, 125) Halda 1989, IK 1996

Haberlea rhodopensis × *Ramonda myconii* **Ramondinae** (→ × *Ramberlea* J. Halda 1989 in Preslia 61, 127) Halda 1989, IK 1991

Jancaea° (= *Ramonda*) *heldreichii* × *Ramonda myconi* **Ramondinae** **IS** (→ × *Jancaemonda* J. Halda 1979 in Preslia 51, 375 as „× *Jankaemonda*“) Halda 1989, IK 1987

Streptocarpus (*Saintpaulia*°) *ionantha* × *Streptocarpus* subgen. *Streptocarpella* **IS** **Streptocarpinae**
Afkhami-Sarvestani et al. 2012



Gesneriaceae Didymocarpoideae tribe Trichosporeae: hybrid connections in the phylogeny according to Yang et al. (2023) doi: 10.1093/sysbio/syad029.

Gesnerioideae 75: 1830. (37 IG)

New World.

5 tribes:

Beslerieae 7: 300 *Besleria* 180, ...

Coronanthereae 9: 23 *Coronanthera* 12, *Mitraria* 1, ...

Gesnerieae 53: 1500.

Napeantheae 1: 25.

Titanotricheae 1: 1.

Gesnerieae 53: 1500

AP website 2026 does not differentiate between subtribes. 5 subtribes according to hr.wikipedia 2026:

Columnneinae 28: 1100 *Alloplectus* 8, *Chrysothemis* 7, *Codonanthe* 9, *Columnnea* 270 (incl. *Dalbergaria*°, *Pentadenia*°, *Tricantha*°), *Crantzia* 3, *Episcia* 8, *Nautilocalyx* 70, *Nematanthus* (incl. *Hypocyrta*°) 30, ...

Gesneriinae 4: 86 *Bellonia* 2, *Gesneria* 60, *Pleidonocarpa* 1, *Rhytidophyllum* 23.

Gloxiniinae 22: 200 *Achimenes* 26, *Amalophyllum* 13 (reactivated), *Diastema* 20, *Eucodonia* 2, *Gloxinia* 5, *Gloxiniella* 1, *Gloxiniopsis* 1, *Goyazia* 2, *Heppiella* 4, *Kohleria* 24, *Mandirola* 3, *Monopyle* 25, *Moussonia* 11, *Niphaea* 3, *Nomopyle* 2, *Pearcea* 19 (incl. *Parakohleria*°), *Phinaea* 3, *Seemannnia* 4, *Smithiantha* 5 (incl. *Naegelia*°), *Solenophora* 16.

Ligeriinae 3: 91: *Paliavana* 6, *Sinningia* 60 (incl. *Koellikeria*°, „*Gloxinia*“), *Vanhouttea* 8.

Sphaerorrhizinae 1: 4 *Sphaerorrhiza* 4.

For general considerations to the basic type situation, see above. In **subfamily Gesnerioideae** (75: 1830) at least in the largest tribe Gesnerieae (53: 1500) all genera of **subtribe Gloxiniinae** (22: 200) and **subtribe Ligeriinae** (3: 91) belong to the same basic type, each.

- Achimenes* div. spec. × *Eucodonia* **Gloxiniinae** (→ × *Achicodonia* Wiehler 1976 in Selbyana 1, 406) The first hybrid of this type was produced by van Houtte around 1868. Wiehler 1976, Dates 1986, see 2003 www.aggs.org/gallery/corgem.html
- Achimenes dulcis* × *Heppiella viscida* **Gloxiniinae** (→ × *Heppimenes* F. N. Batcheller 1978 in Selbyana 2, 323) Dates 1986, IK 1987
- Achimenes flava* × *Niphaea oblonga* **Gloxiniinae** (→ × *Niphimenes* P. Worley 1979 in Selbyana 5, 195) Dates 1986
- Achimenes* × *Smithiantha* **Gloxiniinae** (→ × *Achimenantha* H. E. Moore 1973 in Baileyana 19, 35 = „× *Eucodonopsis*“ (Bartik) H. E. Moore 1954 in Gentes Herbarum 8, 396: *Naegelia achimenoides*) This hybrid was first produced by L. van Houtte around 1866 in Belgium. IK 1959, Knobloch 1972, IK 1981, Dates 1986
- Amalophyllum* × *Niphaea* **Gloxiniinae** (→ × *Niphaphyllon*) Roalson & Boggan 2006 Gesneriads 56 (3), 39) IPNI 2008, AP website 2026
- Chrysothemis* × *Nautilocalyx* **Columneinae** (→ × *Nautilothemis*) <http://home-pathcom.com/rmyhr/genchrys.htm> + www.gesneriads.ca/genchrys.htm POWO 2025 (no entry)
- Codonanthe* × *Nematanthus* **Columneinae** (→ × *Codonatanthus* W. R. Saylor 1978 in Selbyana 5, 3) Willis 1985, IK 1987
- Columnea* × *Dalbergaria*[°] (= *Columnea* p.p.) **IS Columneinae** (→ × *Colbergaria* Wiehler 1976 in Selbyana 1, 408) Wiehler 1976, Dates 1987
- Columnea* × *Pentadenia*[°] (= *Columnea* p.p.) **IS Columneinae** (→ × *Coltadenia* Wiehler 1976 in Selbyana 1, 409) Wiehler 1976, Dates 1987
- Columnea* × *Tricantha*[°] (= *Columnea* p.p.) **IS Columneinae** (→ × *Coltrichantha* Wiehler 1976 in Selbyana 1,409) Wiehler 1976, Dates 1987
- Dalbergaria*[°] *perpulchra* (= *Columnea* p.p.) × *Pentadenia*[°] *ecuadorana* (= *Columnea* p.p.) **IS Columneinae** (→ × *Daltadenia* Wiehler 1976 in Selbyana 1, 409) Wiehler 1976, Dates 1987
- Dalbergaria*[°] *sanguinea* (= *Columnea affinis*) × *Trichantha*[°] *sanguinolenta* (= *Columnea* p.p.) **IS Columneinae** (→ × *Daltrichantha* Wiehler 1976 in Selbyana 1,409) Wiehler 1976, Dates 1987
- Diastema* × *Gloxinia* **Gloxiniinae** (→ × *Gloxinistema*) 1998 <http://aggs.org/gallery/ffrost.html>; crossed by D. Turley (*D. racemiferum* × *G. racemosa*), cf. 2010 <http://piratesplayground.blogspot.de/2010/09/xgloxinistema-pirates-skywalker.html>
- Diastema* × *Gloxiniopsis* **Gloxiniinae** (→ × *Gloxiniastema* Roalson & Boggan 2006 Gesneriads 56 (3), 38) IPNI 2008, POWO 2025 (unplaced), AP Website 2025 (accepted)
- Diastema* × *Phinaea* **Gloxiniinae** (→ × *Phinastema*) see Martens 2014 (with a photo), AP website 2025, POWO 2026 (no entry)
- Diastema vexans* × *Kohleria spicata* **Gloxiniinae** (→ × *Diaskohleria* Wiehler 1976 in Selbyana 1, 407) Wiehler 1976, Dates 1986
- Eucodonia* (“*Achimenes*”) *ehrenbergii* × *Smithiantha* **Gloxiniinae** (→ × *Smithicodonia* H. Wiehler 1976 in Selbyana 1, 406) Knobloch 1972, Willis 1985, Dates 1986, IK 1987

Eucodonia × *Gloxinella* (= *Gloxinia* p.p.) **Gloxiniinae** (→ × *Eucodonella* Roalson & Boggan Gesneriads 56 (3), 35) IPNI 2008

Eucodonia verticillata × *Gloxinia lindeniana* **Gloxiniinae** (→ × *Glocodonia* H. Wiehler 1976 in Selbyana 1, 407) Wiehler 1976, Dates 1986, IK 1987

Eucodonia × *Niphaea* **Gloxiniinae** (→ × *Niphadonia* Worley) AP Website 2025

Gesnera^o (= *Sinningia*) *pyramidalis* × „*Gloxinia*“ ‘*Radiance*’ (= *Sinningia* p.p.) **IS Ligeriinae** (→ × *Gloxinera*^o hort. ex Weathers 1895 in Gardeners' Chronicle, Ser. 3, 17, 144–145; art. hyb.; confer H. E. Moore 1954 in Gentes Herbarum 8, 397) IK 1959, Knobloch 1972 → this famous hybrid belongs to *Sinningia*

Gesneria scabra × *Rhytidophyllum tomentosum* **Gesneriinae** (→ × *Rhytidoneria* R. Katzenberger 1976 in Gloxinian 26 (2), 17) IPNI 2008

Gloxinella (= *Gloxinia* p.p.) × *Kohleria* **Gloxiniinae** (→ × *Kohleriella* Roalson & Boggan 2006 Gesneriads 56 (3), 39) IPNI 2008

Gloxinella (= *Gloxinia* p.p.) × *Seemannia* (= *Gloxinia* p.p.) **Gloxiniinae** (→ × *Seemanniella* 2006 Roalson & Boggan Gesneriads 56 (3), 40) IPNI 2008

Gloxinia nematanthodes × *Heppiella viscida* **Gloxiniinae** (→ × *Heppigloxinia* H. Wiehler 1976 in Selbyana 1, 407) Dates 1986, IK 1987

Gloxinia perennis × *Koellikeria*^o *erinoides* (= *Gloxinia*) **IS Gloxiniinae** (→ × *Glokeria* J. Roberts 1985 in Cross Words 9 (3), 6) Dates 1986

Gloxinia × *Kohleria*, see *Kohleria* × *Seemannia*^o (= *Gloxinia* p.p.)

Gloxinia perennis × *Monopyle maxonii* **Gloxiniinae** (→ × *Gloxinopyle* Wiehler 1976 in Selbyana 1, 407) Dates 1986, IK 1987

Gloxinia × *Moussonia* → see *Moussonia* × *Seemannia*

Gloxinia × *Seemannia* **Gloxiniinae** (→ × *Gloximannia* Roalson & Boggan 2006 Gesneriads 56 (3), 38) IPNI 2008

Gloxinia perennis × *Smithiantha multiflora* **Gloxiniinae** (→ × *Gloxinantha* R. E. Lee 1967 in Bailey 15, 60 = „× *Smithennis*“) IK 1974, Willis 1985

„*Gloxinia*“ (= *Sinningia* p.p.) × *Rechsteineria*^o (= *Sinningia* p.p.) (→ „× *Gloxinera*“), see *Rechsteineria*^o × *Sinningia*

~~„*Gloxinia*“ (= *Sinningia* p.p.) × *Streptocarpus*~~ **ISF Gesnerioideae × Didymocarpoideae** → erroneous, this hybrid belongs to *Sinningia* (→ × *Streptogloxinia* Rodigas) Knobloch 1972, Willis 1985

„*Gloxinia*“ *hybrida* (= *Sinningia* p.p.) × *Sinningia speciosa* (→ „× *Gloxinera*“) Knobloch 1972 → see *Rechsteineria*^o (= *Sinningia* p.p.) × *Sinningia*

Goyazia × *Mandirola* **Gloxiniinae** (→ × *Goydirola*) Onofre de Araujo et al. 2021 (nat. hyb. Brazil)

Heppiella × *Seemannia* **Gloxiniinae** (→ × *Heppimannia* Roalson & Boggan 2006 Gesneriads 56 (3), 39) IPNI 2008

Heppiella viscida × *Smithiantha* **Gloxiniinae** (→ × *Heppiantha* H. E. Moore 1954 in Gentes Herbarum 8, 399; = × *Smitheppiella* H. Wiehler 1976 in Selbyana 1, 406; this hybrid is known since 1857!) IK 1959, Knobloch 1972, Willis 1985, Dates 1986, IK 1987

Hypocyrta^o (= *Nematanthus*) × *Nematanthus* **IS Columneinae** (→ × *Hypotanthus* Saylor 1971 in Gloxinian 21, 20) **IS** IK 1981, Willis 1985

Koellikeria^o *erinoides* (= *Gloxinia*) × *Kohleria spicata* **IS Gloxiniinae** (→ × *Koellikohleria*^o Wiehler 1968 in Bailey 16, 29/30 = × *Glokohleria* Wiehler) IK 1974, Willis 1985, Dates 1986

- Kohleria* × *Pearcea* **Gloxiniinae** (→ × *Pearceria* Roalson & Boggan Gesneriads 2006 56 (3), 40)
IPNI 2008
- Kohleria* × *Seemannia* **Gloxiniinae** (→ × *Seemakohleria* Roalson & Boggan 2006 Gesneriads 56 (3), 38) IPNI 2008
- Kohleria* × *Sinningia* (→ × *Gloxiloma*) → probably not a hybrid, but a cultivar of *Sinningia* 'Paschia'; Park Seed Co. „New Flowers“ cat. 1964, see Dates 1986
- Kohleria digitaliflora* × *Moussonia elegans* **Gloxiniinae** (→ × *Moussokohleria* H. Wiehler 1976 in Selbyana 1, 406/407) Dates 1986, IK 1987
- Mandirola hirsuta* × *Smithiantha zebrina* (= *Naegelia picturata*) **Gloxiniinae** (→ × *Smidirola* Z. J. Huang & Z. H. Feng 2024, nothogen. nov.)
- Moussonia* × *Seemannia* **Gloxiniinae** (→ × *Moussomannia* Roalson & Boggan 2006 Gesneriads 56 (3), 39) IPNI 2008
- Moussonia hirsutissima* × *Smithiantha multiflora* **Gloxiniinae** (→ × *Moussoniantha* H. Wiehler 1976 in Selbyana 1, 407) Dates 1986, IK 1987
- Moussonia hirsutissima* × *Solenophora insignis* **Gloxiniinae** (→ × *Moussonophora* H. Wiehler 1976 in Selbyana 1, 407) Dates 1986, IK 1987
- Niphaea* × *Smithiantha* **Gloxiniinae** (→ × *Niphiantha* Worley) Dates 1986, AP website 2025
- Paliavana* × *Sinningia* **Ligeriinae** (→ × *Sinvana*, ined.) http://aggs.org/gallery/pal_sin.html 1998; the hybrid *P. prasinata* × *S. macropoda* was produced in Sept. 1997 by Mauro Peixoto of Brazil, see http://www.gesneriadsociety.org/ir_ges/indexT-Z.htm: photos by Jon Lindstrom 2006 of *P. tenuiflora* × *S. conspicua*
- Paliavana tenuiflora* × *Vanhouttea lanata* **Ligeriinae** (→ × *Vanvana*, inedit.) not yet IPNI 2011 http://www.gesneriadsociety.org/ir_ges/irbynum2006.htm (crossed by J. Lindstrom in 2009)
- Pentadenia*^o *sericea* (= *Columnea* p.p.) × *Trichantha*^o *brenneri* **IS Columneinae** (= *Columnea* p.p.) (→ × *Trichadenia* H. Wiehler 1976 in Selbyana 1, 409) IK 1987, Dates 1987
- Rechsteineria*^o (= *Sinningia* p.p.) × *Sinningia* („*Gloxinia*“) **IS Ligeriinae** (→ „× *Gloxinera*“) Knobloch 1972, Willis 1985
- Sinningia* × *Vanhouttea* **Ligeriinae** (→ × *Vanhingia*) <http://www4.torget.se>, <http://www.gesneriadsociety.org> 1998; known since 1996, not in IPNI 2011

1. **Subtribus Gesneriinae** Oerst.

1. *Bellonia* L. (2 spp.)
2. *Pheidonocarpa* L. E. Skog (1 sp.)
3. *Gesneria* L. (54 spp.)
4. *Rhytidophyllum* Mart. (23 spp.)

2. **Subtribus Gloxininae** G. Don

1. *Gloxinia* L'Hér. (5 spp.)
2. *Gloxiniopsis* Roalson & Boggan (1 sp.)
3. *Seemannia* Regel (4 spp.)
4. *Monopyle* Moritz ex Benth. & Hook. fil. (25 spp.)
5. *Diastema* Benth. (18 spp.)
6. *Gloxinella* (H. E. Moore) Roalson & Boggan (1 sp.)
7. *Kohleria* Regel (24 spp.)
8. *Pearcea* Regel (19 spp.)
9. *Achimenes* Pers. (26 spp.)
10. *Eucodonia* Hanst. (2 spp.)
11. *Smithiantha* Kuntze (6 spp.)
12. *Nomopyle* Roalson & Boggan (2 spp.)
13. *Niphaea* Lindl. (3 spp.)
14. *Moussonia* Regel (22 spp.)
15. *Solenophora* Benth. (15 spp.)
16. *Amalophyllum* Brandegees (14 spp.)
17. *Phinaea* Benth. (3 spp.)
18. *Heppiella* Regel (4 spp.)
19. *Chautemsia* A. O. Araujo & V. C. Souza (1 sp.)
20. *Mandirola* Decne. (3 spp.)
21. *Goyazia* Taub. (3 spp.)

3. **Subtribus Columneinae** Hanst.

1. *Nautilocalyx* Linden (39 spp.)
2. *Centrosolenia* Benth. (15 spp.)
3. *Chrysothemis* Decne. (10 spp.)
4. *Paradrymonia* Hanst. (17 spp.)
5. *Trichodrymonia* Oerst. (29 spp.)
6. *Pagothyra* (Leeuwenb.) J. F. Sm. & J. L. Clark (1 sp.)
7. *Crantzia* Scop. (4 spp.)
8. *Glossoloma* Hanst. (29 spp.)
9. *Alloplectus* Mart. (8 spp.)
10. *Drymonia* Mart. (82 spp.)
11. *Columnea* L. (215 spp.)
12. *Corytoplectus* Oerst. (12 spp.)
13. *Neomortonia* Wiehler (1 sp.)
14. *Pachycaulos* J. L. Clark & J. F. Sm. (1 sp.)
15. *Alsobia* Hanst. (4 spp.)
16. *Episcia* Mart. (9 spp.)
17. *Christopheria* J. F. Sm. & J. L. Clark (1 sp.)
18. *Rufodorsia* Wiehler (4 spp.)
19. *Oerstedina* Wiehler (2 spp.)
20. *Cobananthus* Wiehler (1 sp.)
21. *Nematanthus* Schrad. (32 spp.)
22. *Lesia* J. L. Clark & J. F. Sm. (2 spp.)
23. *Codonanthe* (Marloth) Hanst. (8 spp.)
24. *Codonanthopsis* Mansf. (15 spp.)
25. *Rhoogeton* Leeuwenb. (2 spp.)
26. *Cremersia* Feuillet & L. E. Skog (1 sp.)
27. *Lampadaria* Feuillet & L. E. Skog (1 sp.)
28. *Lembocarpus* Leeuwenb. (1 sp.)

4. **Subtribus Sphaerorrhizinae** A. Weber & J. L. Clark

1. *Sphaerorrhiza* Roalson & Boggan (4 spp.)

5. **Subtribus Ligeriinae** Hanst.

1. *Sinningia* Nees (77 spp.)
2. *Paliavana* Vell. ex Vand. (6 spp.)
3. *Vanhouttea* Lem. (9 spp.)

Gesneriaceae Gesnerioideae tribe Gesnerieae: hybrid connections, arranged after “world plants” after hr.wikipedia (2025, CC BY SA 4.0).

References:

- Afkhami-Sarvestani R et al. (2012) Interspecific crosses within the *Streptocarpus* subgenus *Streptocarpella* and intergeneric crosses between *Streptocarpella* and *Saintpaulia ionantha* genotypes. *Scientia Horticulturae* 148, 215–222.
- Batcheller FN (1978) $\times$ *Heppimenes* a new intergeneric hybrid in the Gesneriaceae. *Selbyana* 2 (2–3), 323–324.
- Dates (1986) The Gesneriad Register 1986. Checklist of names with descriptions of intergeneric hybrids in the tribe Gloxinieae. Registered Gesneriads List 1957–1986. Published with *The Gloxinian* 36, No. 6.
- Dates (1987) The Gesneriad Register 1987. Published with *The Gloxinian* 37, No. 6.
- Onofre de Araujo A et al. (2021) A natural intergeneric hybrid of Gesneriaceae from Brazil. *Phytotaxa* 497, 79–96. <https://doi.org/10.11646/phytotaxa.497.2.2>
- Feuillet C (1993) Nomenclatural solutions in the Gesneriaceae. *Taxon* 42 (1), 105–109.
- Halda J (1979) A new intergeneric hybrid in the family Gesneriaceae. *Preslia* 51, 375–376.
- Gesneriad Society <https://gesneriadsociety.org/>
- Halda J (1989) Four new intergeneric hybrids in the family Gesneriaceae. *Preslia* 61, 125–127.
- Martens D (2014) Intergenerics. *Gleanings* 5 (6), 6–9. <https://gesneriadsociety.org/wp-content/uploads/2014/06/Gleanings2014.06.pdf>
- Roalson EH et al. (2005a) Untangling the Gloxinieae (Gesneriaceae). I. Phylogenetic patterns and generic boundaries inferred from nuclear, chloroplast, and morphological cladistic data sets. *Taxon* 54 (2), 389–410.
- Roalson EH et al. (2005b) Reorganization of tribal and generic boundaries in the Gloxinieae (Gesneriaceae: Gesnerioideae) and the description of a new tribe in the Gesnerioideae, Sphaerorrhizeae. *Selbyana* 25, 225–238.
- Saylor WR (1978) The 1st intergeneric hybrid between *Codonanthe* and *Nematanthus* Gesneriaceae. *Selbyana* 5, 1–3.
- Skog LE (2006) Recent developments in research in Gesneriaceae. *Gesneriads* 56 (1), 35–41.
- Skog LE & Boggan JK (2005) World Checklist of Gesneriaceae.
- Weathers J (1895) *Gloxinera* $\times$ Brilliant. (*Gesnera pyramidalis* female $\times$ *Gloxinia radiance* male.) *The Gardener's Chronicle*, February, 144–145.
- Weber A (2004) Gesneriaceae. Pp. 63–158 in Kubitzki K & Kadereit J (eds.) *The families and genera of vascular plants*. Vol. 7. Dicotyledons. Lamiales (except Acanthaceae including Avicenniaceae). Berlin/Heidelberg: Springer; cf. <http://www.genera-gesneriaceae.at/>
- Weber A & Skog LE (2007 onwards) The genera of Gesneriaceae. Basic information with illustration of selected species. Ed. 2. <http://www.genera-gesneriaceae.at/>
- Weber A et al. (2013) A new formal classification of Gesneriaceae". *Selbyana*. 31 (2), 68–94. JSTOR 24894283.
- Weber A et al. (2020) Keys to the infrafamilial taxa and genera of Gesneriaceae". *Rheedeia* 30 (1), 5–47. doi:10.22244/rheedeia.2020.30.01.02
- Wiehler H (1976a) A report on the classification of *Achimenes*, *Eucodonia*, *Gloxinia*, *Goyazia* and *Anetanthus* (Gesneriaceae). *Selbyana* 1 (4), 374–404.
- Wiehler H (1976b) New hybrid genera in the Gesneriaceae. *Selbyana* 1, 405–409.
- Wiehler H (1978) *Parakohleria* new genus South American in the Gesneriaceae. *Selbyana* 5, 4–

10.

Wiehler H (1979) Generic delimitation in a new classification of the Neotropical Gesneriaceae. Ph.D. Thesis, Univ. of Florida, Miami. 238 pp.

Wiehler H (1983) A synopsis of Neotropical Gesneriaceae. Selbyana 6, 1–219.

http://www.genera-gesneriaceae.at/general_items/wiehler.htm

Yang L et al. (2023) Phylogenomic analyses reveal an allopolyploid origin of core Didymocarpaceae (Gesneriaceae) followed by rapid radiation. Syst. Biol. 72, 1064–1083. doi: 10.1093/sysbio/syad029

Grossulariaceae (Saxifragales) 1: 150

currant family = Johannisbeergewächse

Ribes 150 (incl. *Grossularia*°).

Probably **basic type family Grossulariaceae** (*Ribes*) (1: 150): monogeneric with many interspecific hybrids.

IS: POWO 2026: *Ribes* 39 IS. But more hybrids are known in horticulture, ca. 80?

Machs et al. (2021) produced several distant intersectional hybrids in *Ribes*.

Grossularia° *crispa* (= *Ribes uva-crispa*) × *Ribes nigrum*, *alpinum* IS (→ × *Ribularia* Holub 1998 Preslia 70, 110; = × *Ribelaria* Mezhen'skyi 2005 Promyshl. Bot. 2005 (5): 112.) Knobloch 1972, Popova 1983

References:

Popova AF (1983) Cytoembryological study of some *Ribes* and *Grossularia* species with regard to their hybridization. [Ukrainian] Ukrayins'Kyj Botanichnyi Zhurnal 40 (2), 46–52.

Machs E et al. (2021) Metagenomics of distant hybrids in the genus *Ribes* (Grossulariaceae) Biol. Life Sci. Forum 2022, 11(1), 26; <https://doi.org/10.3390/IECPS2021-11933>

Haemodoraceae (Commelinales) 14: 116. 1 IG

kangaroo-paws and allies, blood-roots = Kängurublumen-Verwandte

2 subfamilies.

Anigozanthos 11, *Macropodia* 1, ...

IS: POWO 2026: 0 IS.

en.wikipedia 2026: *Anigozanthos* many IS (cultivars).

Anigozanthos × *Macropodia* **Conostylidoideae** Verhoogt & Sivasithamparam 1986 ((*A. rufus* × *A. manglesii*) × *M. fuliginosa*). closely related

References:

Verhoogt MM & Sivasithamparam K (1986) Ink-spot disease of kangaroo-paws *Anigozanthos* Labill. and *Macropodia* Drumm ex Harv. in Western Australia. Crop Research (Edinburgh) 26 (1), 49–56.

Hamamelidaceae (excl. Altingiaceae) (Saxifragales) 27: 82. 1 IG

witch-hazel family = Zaubernussgewächse

4 subfamilies:

Disanthoideae 1: 1, Exbucklandioideae 2: 7, Hamamelidoideae 23: 78, Mytilarioideae 2: 2.

Hamamelidoideae 23: 78

6 tribes.

IS: POWO 2026: *Fothergilla* 1 IS, *Hamamelis* 2 IS.

Parrotia persica × *Sycopsis sinensis* **Fothergilleae** (→ × *Sycoparrotia* P. K. Endress & Anlinker 1968 in Schweiz. Beitr. Dendrol. 16–18, 11–23) IK 1974, Willis 1985, Zander 2008, POWO 2026

Hydrangeaceae (Cornales) 9: 270

hydrangea family = Hortensiengewächse

2 subfamilies:

Hydrangeoideae 15: 185, Jamesioideae 2: 5.

Hydrangeoideae 15: 185

2 tribes:

Hydrangeae 9, Philadelphieae 6.

IS: POWO 2026: *Deutzia* 1 IS, *Hydrangea* 4 IS, *Philadelphus* 0 IS.

In horticulture >6 hybrids are known in *Deutzia* and >10 hybrids in *Philadelphus*.

Hydrangea (*Dichroa*^o) *febrifuga* × *Hydrangea macrophylla* **IS Hydrangeae** (→ × *Didrangea*^o J. M. H. Shaw) EC Jones et al. 2006 (ovule culture), Kardos 2008, Reed et al. 2008, Rinehart et al. 2010

References:

- Jones KD, Reed M & Rinehart T (2006) Production of an intergeneric Hydrangeaceae hybrid. HortScience 41, 967–1084.
- Kardos JH (2008) Interspecific and intergeneric hybridization involving *Hydrangea macrophylla* (Thunberg) Seringe and inheritance studies in *H. macrophylla*. PhD thesis. https://openscholar.uga.edu/record/9034/files/kardos_joshua_h_200805_phd.pdf
- Reed SM, Jones KD & Rinehart TA (2008) Production and characterization of intergeneric hybrids between *Dichroa febrifuga* and *Hydrangea macrophylla*. J. Amer. Soc. Hort. Science 133 (1), 84–91. <http://journal.ashspublications.org/content/133/1/84.full>
- Rinehart TA, Scheffler BE & Reed SM (2010) Ploidy variation and genetic diversity in *Dichroa*. HortScience 45 (2), 208–213.

Hydrocharitaceae (Alismatales) 18: 116

frogbit or tape grass family = Froschbissgewächse

4 subfamilies.

Anacharioideae 7: 38, Hydrilloideae 8: 61, Hydrocharitoideae 2: 5, Stratiotoideae 1: 1.

IS: see Les & Philbrick (1993) (in 5 genera).

Boottia^o (*Ottelia*) *cordata* × *Ottelia alismoides* IS Hydrocharitoideae (art. hyb.) Kaul 1969, Knobloch 1972

References:

Kaul RB (1969) Morphology and development of the flowers of *Boottia cordata*, *Ottelia alismoides*, and their synthetic hybrid. Amer. J. Bot 56, 951–959.

Les DH & Philbrick CT (1993) Studies of hybridization and chromosome number variation in aquatic angiosperms: evolutionary implications. Aquatic Botany 44, 181–228. list interspecific hybrid reports

Hypericaceae (Malpighiales) 6: 600

St. John's wort family = Johanniskrautgewächse

3 tribes:

Cratoxyleae 2: 7 (*Cratoxylum*, *Eliaea*, excl. *Triadenum*), Hypericeae 1: 500, Vismieae 3: 100.

Hypericeae 1: 500

Hypericum (now incl. *Triadenum*^o) 500 (36 sections according to Robson & Crockett 2011, but see Nürk et al. 2015 and Robson 2016).

Possibly **basic type Hypericaceae tribe Hypericeae** (*Hypericum*) (1: 500) as a well-defined taxon with specific characteristics, e.g. floral structure and typical glands. But all known hybrids are within the sections of Robson & Crockett.

IS: POWO (2026) *Hypericum* 15 IS.

For further details and classification see

https://en.wikipedia.org/wiki/List_of_Hypericum_nothospecies

References:

Nürk NM et al. (2015) Oligocene niche shift, Miocene diversification – Cold tolerance and accelerated speciation rates in the St. John's Worts (*Hypericum*, Hypericaceae). BMC Evolutionary Biology 15, 80. DOI:10.1186/s12862-015-0359-4

Robson NKB & Crockett SL (2011) Taxonomy and chemotaxonomy of the genus *Hypericum*. Medicinal and Aromatic Plant Science and Biotechnology 5 (Special Issue 1). Europe PMC Funders 1–13. [PMC 3364714](https://pubmed.ncbi.nlm.nih.gov/3364714/)

Robson NKB (2016) And then came molecular phylogenetics – Reactions to a monographic study of *Hypericum* (Hypericaceae). Phytotaxa 255, 181–198. DOI: [10.11646255.3.1](https://doi.org/10.11646/255.3.1)

Iridaceae (Asparagales) 66: 2200

iris family = Schwertliliengewächse

7 subfamilies:

Aristeoideae 1: 58, Crocoideae 32: 1100, Geosiridoideae 1: 3, Iridoideae 30: 920, Isophysioideae 1: 1, Nivenioideae 3: 14, Patersonioideae 1: 24.

Crocoideae (= Ixoideae) 28: 995

IS: POWO (2026) *Babiana* 1 IS, *Crocasmia* 1 IS, *Crocus* 4 IS, *Gladiolus* 3 IS, *Romulea* 6 IS, *Watsonia* 1 IS.

Acidanthera[°] (= *Gladiolus* p.p.) × *Gladiolus* IS (→ × *Gladanthera*[°] J. M. Wright 1966 in *Gladiolus* Ann., 33; vide A. P. Hamilton 1966 in *Gard. Chron.*, Ser.3, clix, 336, 352) IK 1974, Ohri & Khoshoo 1983, Willis 1985

Antholyza[°] *revoluta* (= *Gladiolus watsonius*) × *Gladiolus* IS McLean 1939

Gladiolus × *Homoglossum*[°] (= *Gladiolus* p.p.) IS (→ × *Homoglad*[°] Ingram 1967 in *Journ. Roy. Hort. Soc., Lond.* 92, 311; incorrect name) IK 1974, Willis 1985

Sparaxis × *Streptanthera*[°] (= *Sparaxis* p.p.) IS (→ × *Sparanthera*[°] Ciferri & Giacom. 1950 *Nomencl. Fl. Ital.*, Pt. 1, 145) IK 1974, Willis 1985

Iridoideae 30: 820

IS: POWO (2026) *Iris* 20 IS.

Belamcanda[°] (*Iris*) *chinensis* × *Pardanthopsis*[°] (= *Iris*) *dichotoma* IS **Iridinae** (→ × *Pardancanda* Lenz 1972 in *Aliso* 7, 407) Lenz 1972, Chimphamba 1973, IK 1981, Willis 1985, many photos in the web

Rigidella[°] (*Tigridia*) *orthantha* × *Tigridia pavonia* IS **Tigridinae** (→ *Tigridia* × *mathewii* J. M. Shaw 2015 *Phytoneuron* 53, 4) Mathew 1978

References:

- Chimphamba BB (1973) Intergeneric hybridization between *Iris dichotoma* and *Belamcanda chinensis*. *Cytologia* (Tokyo) 38, 539–547.
- Lenz LW (1972) An intergeneric hybrid between *Belamcanda chinensis* and *Pardanthopsis dichotoma* (= *Iris dichotoma*). *Aliso* 77, 405–407.
- Mathew B (1978) *The Larger Bulbs*. Batsford, London.
- McLean FT (1939) A bigeneric gladiolus hybrid. *Contr. Boyce Thompson Inst.* 10 (2), 189–190.
- Ohri D & Khoshoo TN (1983) Cytogenetics of garden *Gladiolus* 3. Hybridization. *Zeitschrift für Pflanzenzüchtung* 91 (1), 46–60.